

ABSTRACT

09/486,779

A family of emitter controlled thyristors employ plurality of control schemes for turning the thyristor ^{on} [an] and off. In a first embodiment of the present invention a 5 family of thyristors are disclosed all of which comprise a pair of MOS transistors, the first of which is connected in series with the thyristor and a second which provides a negative feedback to the thyristor gate. A negative voltage applied to the gate of the first MOS transistor causes the thyristor to turn on to conduct high currents. A zero to positive voltage applied to the first MOS gate causes the 10 thyristor to turn off. The negative feedback insures that the thyristor only operates at its breakdown boundaries of the latching condition with the NPN transistor portion of the thyristor operating in the active region. Under this condition, the anode voltage V_A continues to increase without significant anode current increase. Emitter turn-off (ETO) thyristor fabrication packages are also disclosed having packaged 15 semiconductor devices controlling the thyristor.